Beams and Applications Seminar Series

This ANL seminar series focuses on the physics, technology and applications of particle and photon beams. It is sponsored jointly by the ASD Division, the AWA group of the HEP Division, and the ATLAS group of the PHY Division

Bldg. 401, room B2100
Friday, December 1
1:30 PM

Courtlandt L. Bohn
Fermilab

The Making of a High-Average-Power Free-Electron Laser: Snatching a Holy Grail

Host: Wei Gai

Jefferson Laboratory's kW-level infrared free-electron laser comprises a superconducting linear accelerator that powers itself by recovering energy from the post-lasing electron beam. In achieving first lasing, the accelerator operated "straight ahead" to deliver 38-MeV, 1.1-mA cw current for lasing near 5 µm. The waste beam was sent directly to a dump during stable operation at up to 311 W. Using a recirculation loop to send the electron beam back to the accelerator for energy recovery, the accelerator now produces cw average currents up to 5 mA while lasing cw at wavelengths between 3-6 µm. It has produced up to 1720 W continuous output power at 3.1 µm. The machine is now a users' facility supporting a full slate of user experiments.

For more information visit

http://www.aps.anl.gov/asd/physics/seminar.html

Visitors from off-site please contact Debbie Briddick
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to arrange for a gate pass.